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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 09/910,669
Filing Date: July 20, 2001
Appellant(s): FRANCIS ET AL.

Chester L. Jordan II
(Reg. No. 42,669)
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 7 November 2007 appealing from the Office action mailed 7 March 2007.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is substantially correct. The changes are as follows:

WITHDRAWN REJECTIONS

The following grounds of rejection are not presented for review on appeal because they have been withdrawn by the examiner: the 35 U.S.C. 101 rejections of claims 19-27.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

6,002,395	WAGNER ET AL.	12-1999
5,835,693	LYNCH ET AL.	11-1998
5,969,717	IKEMOTO	10-1999

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1-5, 8, 10-14, 17, 19-23, 26 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wagner et al. U.S. Patent 6,002,395 (hereinafter "Wagner") and Lynch et al. U.S. Patent 5,835,693 (hereinafter "Lynch").

Referring to claims 1, 10, 19 and 28, Wagner teaches a method, system and computer program product comprising means and circuitry (the developmental computing system comprising a processor, memory, and display taught in the Wagner et al. reference comprises

circuitry) (Wagner: column 3, lines 18-30) for accepting user input specifying a geometrical arrangement of two or more buttons on one or more displayed pages (using the GUI builder to specify a placement of buttons such as "PIZZAS", "SANDWICHES", "COFFEE", etc. in the sample pizza shop application shown in Figure 2A, which is an example of the reference's teachings) (Wagner: column 2, lines 21-28, column 3, lines 45-52 and column 4, lines 36-53), means and circuitry for accepting user input labeling at least two of the two or more buttons on the one or more displayed pages (naming the titles of the buttons shown in Figure 2A; for example, assigning the name "SPECIAL DELUX" to button represented by reference number "211-3") (Wagner: column 4, lines 37-46 and further shown Figures 3A-3C, which show controls representing the position and name of the desired button on the GUI), means and circuitry for accepting user input defining at least one interaction between the labeled at least two buttons (relationships between buttons, for example, pressing the "BEER" button in Figure 2A deletes and replaces the buttons in the "DRINK" screen) (Wagner: column 4, lines 54-62), means and circuitry for accepting user input specifying at least one constraint cost for the defined at least one interaction (parent child relationship between screens and buttons; for example, it can be seen that the buttons "PIZZAS", "SPECIAL PEPPERONI", "SPECIAL DELUX" and "SPECIAL VEGGIE" would need to be placed together under the "PIZZA" category in Figure 2A) (Wagner: column 4, lines 11-21 and 36-47), and means and circuitry for automatically assigning labels of the at least two buttons among the two or more buttons on one or more displayed pages such that the at least one constraint cost is substantially optimized (controls shown in Figures 3A-3C associated with each button shown in Figures 2A-2D; for example, in order to optimize screen space, related items such as "PIZZAS", "SPECIAL PEPPERONI",

"SPECIAL DELUX" and "SPECIAL VEGGIE" would be automatically labeled and placed together under the "PIZZA" category; as another example, when the "Beer" button is pressed, only the "Drinks" screen is automatically deleted and replaced, or labeled with new buttons, i.e. Wagner inherently teaches automatically arranging the multiple screens for the touch screen display in order to optimize parent/child relationships, interactions of buttons and screen space) (Wagner: column 4, lines 1-62 and column 13, lines 32-67 and Figure 4). This is further recited in column 17, lines 1-10, column 26, lines 5-35 and shown in Figures 5B and 5C, where logic is given to modify and move buttons and screens according to their relationships. However, Wagner fails to explicitly teach the constraint cost having a corresponding constraint cost value and the at least one constraint cost value is indicative of an optimization of the at least one constraint cost. Lynch teaches a design, simulation and optimization solution using a graphical user interface similar to that of Wagner. In addition, Lynch further teaches calculating at least one constraint cost value corresponding to the at least one constraint cost (calculating constraint cost values, i.e. cost function values) (Lynch: column 37, lines 54-67), and the at least one constraint cost value is indicative of a relative optimization of the at least one constraint cost (the cost functions, which have their respective calculated values, are optimized) (Lynch: column 37, lines 54-67 and column 59, lines 46-53). It would have been obvious to one of ordinary skill in the art, having the teachings of Wagner and Lynch before him at the time the invention was made to modify the method for building a graphical user interface of Wagner to include the use of constraint cost values for optimization taught by Lynch. One would have been motivated to make such a combination in order to allow easy and fast optimization of parameters, reducing the cost of labor and preserving design repeatability.

Referring to claims 2, 11 and 20, Wagner, as modified, teach accepting user input specifying one or more sizes of the one or more displayed pages (Wagner: column 17, lines 1-10).

Referring to claims 3, 12 and 21, Wagner, as modified, teach accepting user input specifying two or more locations (positions) of the two or more buttons on the one or more displayed pages (Wagner: column 8, lines 61-67 and column 9, lines 1-4 and lines 34-52).

Referring to claims 4, 13 and 22, Wagner, as modified, teach accepting user input labeling (naming) at least two buttons on a first displayed page presented to the user (Wagner: column 4, lines 11-21 and column 24, lines 16-24).

Referring to claims 5, 14 and 23, Wagner, as modified, teach accepting user input labeling at least one button on a first displayed page presented to the user and accepting user input labeling at least one button on a second displayed page presented to the user (for example, labeling the button "211-2" as "SPECIAL PEPPERONI" in Figure 2A on the first displayed screen, and the button "231-7" as "INDIVIDUAL PAN" in Figure 2D on a subsequently displayed screen) (Wagner: column 4, lines 11-21 and column 24, lines 16-24).

Referring to claims 8, 17 and 26, Wagner, as modified, teach accepting user input specifying at least one weighting factor to be associated with the specified at least one constraint cost (the calculated/evaluated values are weighted) (Lynch: column 59, lines 46-53).

Claims 6-7, 15-16 and 24-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wagner et al. U.S. Patent 6,002,395 (hereinafter "Wagner") and Lynch et al. U.S. Patent

5,835,693 (hereinafter "Lynch"), as applied to claims 1, 10 and 19 above, and further in view of Ikemoto U.S. Patent 5,969,717.

Referring to claims 6, 15 and 24, while Wagner and Lynch teach all of the limitations as applied to the claims above, they fail to explicitly teach accepting user input identifying at least one relationship between the labeled at least two buttons selected from a group including a Fitt's movement interaction, a Euclidean-distance interaction, a city-block distance interaction, an x-directed interaction and a y-directed interaction. Ikemoto teaches a method for specifying an arrangement of at least two buttons in building a GUI (column 2, lines 32-46 and further shown in Figure 1) similar to that of Wagner and Lynch. In addition, Ikemoto further teaches identifying the relationship between buttons including a position and distance interaction of the buttons (x-directed distance between components and y-directed distance between components) (Ikemoto: column 6, lines 56-59, column 7, lines 1-7 and column 10, lines 29-44). Fitt's movement interaction, Euclidean-distance interaction, a city-block distance interaction, an x-directed interaction and y-directed interaction are all distance related relationships and therefore, could be included in the group of relationships defined between the labeled buttons. It would have been obvious to one of ordinary skill in the art, having the teachings of Wagner, Lynch and Ikemoto before him at the time the invention was made, to modify the GUI building method of Wagner and Lynch to include the use of distance related metrics to define relationships between GUI components, as taught by Ikemoto. One would have been motivated to make such a combination in order to create an efficient interactive process between the user and the GUI builder program; by allowing the users to specifying exactly the distance between each and every

component on the display screen, users will be able to create an interface customized to their preferences and needs.

Referring to claims 7, 16 and 25, while Wagner and Lynch teach all of the limitations as applied to the claims above, they fail to explicitly teach specifying at least one constraint cost for the at least one interaction selected from a group including a global-difficulty cost, a pages-to-close-buttons cost, a pages-to-fixed buttons cost, a path-difficulty cost, a pages-to-far buttons cost, and a parent-to-child variability cost. Ikemoto teaches a method for specifying a relationship and interaction between components of a GUI (column 13, lines 25-42 and further shown in Figures 12 and 14) similar to that of Wagner and Lynch. In addition, Ikemoto further teaches identifying the constraint cost for the interaction of components including a pages-to-far buttons cost and a parent-child variability cost (components that are unrelated to each other are placed in separate areas on the display screen and a consistent hierarchical parent-child display of components) (Ikemoto: column 13, lines 25-42 and further shown in Figures 12, 15A and 21). Global-difficulty cost, a pages-to-close-buttons cost, a pages-to-fixed buttons cost, a path-difficulty cost, a pages-to-far buttons cost, and a parent-to-child variability cost are all types of interaction relationships between components and therefore, could be included in the group of constraint cost relationships between GUI components. It would have been obvious to one of ordinary skill in the art, having the teachings of Wagner, Lynch and Ikemoto before him at the time the invention was made, to modify the GUI building method of Wagner and Lynch to include the use of constraint costs for the interaction of GUI components, as taught by Ikemoto. One would have been motivated to make such a combination in order to create an efficient interactive process between the user and the GUI builder program; by allowing the users to

specifying exactly what factors and relationships are the most important in placing components on the display screen, users will be able to create an interface customized to their preferences and needs.

(10) Response to Argument

A. 35 U.S.C. 101 rejection of claims 19-27.

Appellant's arguments with regard to the 35 U.S.C. 101 rejections of claims 19-27 have been considered and are now moot in view of the withdrawal of the rejection.

B. Claims 1, 10, 19 and 28 are obvious under 35 U.S.C. 103 and are not patentable over Wagner and Lynch.

1. The appellant argues that the proposed combination or Wagner and Lynch fails to teach "accepting user input specifying at least one constraint cost for the defined at least one interaction", "calculating at least one constraint cost value corresponding, respectively, to the at least one constraint cost" and "automatically assigning labels of the at least two buttons among the two or more buttons on one or more displayed pages such that the at least one constraint cost is substantially optimized". The examiner respectfully disagrees.

With regards to the "accepting user input specifying at least one constraint cost for the defined at least one interaction" limitation, Wagner teaches, in column 2, lines 21-28, column 3, lines 45-52 and column 4, lines 36-53, using the GUI builder to specify a placement of buttons

such as "PIZZAS", "SANDWICHES", "COFFEE", etc. in the sample pizza shop application shown in Figure 2A.

With regard to the "automatically assigning labels of the at least two buttons among the two or more buttons on one or more displayed pages such that the at least one constraint cost is substantially optimized" limitation, Wagner teaches the optimization of a constraint cost such as screen space via the location of labeled buttons; for example, in order to optimize screen space, related items such as "PIZZAS", "SPECIAL PEPPERONI", "SPECIAL DELUX" and "SPECIAL VEGGIE" would be automatically labeled and placed together under the "PIZZA" category; as another example, when the "Beer" button is pressed, only the "Drinks" screen is automatically deleted and replaced, or labeled with new buttons (column 4, lines 1-62 and column 13, lines 32-67 and Figure 4). This is further recited in column 17, lines 1-10, column 26, lines 5-35 and shown in Figures 5B and 5C, where logic is given to modify and move buttons and screens according to their relationships. This teaching of Wagner shows the arranging of multiple screens for the touch screen display in order to optimize constraint costs such as parent/child relationships, interactions of buttons and screen space.

With regard to the "calculating at least one constraint cost value corresponding, respectively, to the at least one constraint cost" limitation, Lynch teaches, in column 37, lines 54-67, calculating constraint cost values such as cost function values.

2. The appellant further states that although Wagner shows related "Pizza" buttons in close proximity to one another, it does not show optimization of two or more buttons on a plurality of displayed pages based on a defined constraint cost. The examiner respectfully notes that the

limitations of the independent claims recite "at least two buttons among the two or more buttons on *one or more* displayed pages"; the claimed limitations do not require that the optimization necessarily occurs on buttons on a plurality of pages; in contrast, a teaching of the optimization of buttons on one displayed page would meet the recited claim limitations. Wagener teaches related items such as "PIZZAS", "SPECIAL PEPPERONI", "SPECIAL DELUX" and "SPECIAL VEGGIE" are placed together under the "PIZZA" category as shown in Figure 2A, which optimizes the relationship between the buttons by placing them close together, thereby making the interactions between the buttons easier.

3. The appellant states that Wagner is devoid of any teaching of the ranking of various cost constraints and automatically arranging similar or dissimilar buttons on multiple screens based on rankings specified by the designer. The examiner respectfully argues that the claims do not recite limitations regarding the ranking of various constraint costs and arranging the buttons based on specified rankings.

4. The appellant appears to be stating that there is no teaching of optimization in Wagner. The examiner respectfully disagrees and refers to the response in sections 1-2. Furthermore, even if Wagner does not provide teachings of optimization (which the examiner respectfully maintains does), Lynch teaches the optimization of a cost function using constraint costs (column 37, lines 54-67 and column 59, lines 46-53). Therefore, the combination of Wagner and Lynch teaches the optimization feature.

5. The appellant argues that although Lynch discloses constraint cost values on a computer, Lynch is devoid of any teaching of the optimization of the *layout of buttons on a graphical user interface*. The examiner respectfully disagrees. In response to appellant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). The examiner relies upon Wagner to teach the optimization of the layout of buttons on a graphical user interface with regards to a constraint cost, therefore, the combination or Wagner and Lynch teaches optimization of the layout of buttons on a graphical user interface. The appellant states that the kinetic constraints calculated in Lynch are not applicable to the optimization problem addressed in the instant application. The examiner respectfully disagrees. In response to appellant's argument that Lynch is nonanalogous art, it has been held that a prior art reference must either be in the field of appellant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the appellant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, Lynch's teaching involves creating simulations on a computer display; Lynch, Wagner and the instant application all provide teachings directed to the field of computer art, more specifically to the displays on a graphical user interface. Furthermore, Lynch teaches an optimization solution that calculates constraint values and uses them to optimize a cost function, as recited in column 37, lines 54-67 and column 59, lines 46-53; the instant application also relates to an optimization solution and therefore, Lynch is pertinent to the problem with which the instant application is concerned. In addition, the

examiner respectfully argues that even if teaching, suggestion and motivation to combine the Wagner and Lynch reference did not exist (which the examiner respectfully maintains does), the combination is still proper in view of KSR International Co.v. Teleflex Inc. Known work in one field of endeavor may prompt variations of it for use in either the same field or a different one based on design incentives or other market forces if the variations would have been predictable to one of ordinary skill in the art. Wagner teaches a builder tool that allows buttons to be placed on a touch screen in such a way as to optimize a constraint cost, such as screen space. Wagner does not teach that the constraint costs have a corresponding constraint cost value that is optimized. Lynch teaches a computer optimization method that optimizes using constraint cost values. Since the marketplace reflects the reality that using numerical values to represent costs in optimization is commonplace, it would have been obvious to one of ordinary skill in the computer arts to update the assignment of buttons according to an optimization of constraint costs shown in Wagner with the optimization of a cost function using constraint cost values, as shown in Lynch, in order to gain commonly understood benefits such as producing a more specific, precise and accurate optimization.

6. The appellants provide the same arguments for independent claims 10, 19 and 28 as those provided for independent claim 1. Therefore, the examiner respectfully refers to the response to arguments cited in sections 1-5 above.

7. Furthermore, the appellants argue that the dependent claims are not obvious over the prior art because the independent claims are not obvious over the prior art. The examiner respectfully refers to the response to arguments cited in sections 1-5 above.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

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